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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/550,070	09/21/2005	Shigeki Kawarabata	10873.1783USWO	2143
52835 7590 05/14/2009 HAMRE, SCHUMANN, MUELLER & LARSON, P.C. P.O. BOX 2902 MINNEAPOLIS, MN 55402-0902				
EXAMINER KURTZ, BENJAMIN M				
ART UNIT 1797		PAPER NUMBER		
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/550,070

**Applicant(s)**

KAWARABATA ET AL.

**Examiner**

BENJAMIN KURTZ

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 April 2009.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.  
4a) Of the above claim(s) 14-16 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-13 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 21 September 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_  
5) ☐ Notice of Informal Patent Application  
6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 1-13 are currently pending, claims 14-16 are withdrawn.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

- 1. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Esmond US 3 827 562, Kruse et al. US 4 617 122, Wachter et al. US 3 873 288 and Strnad US 4 133 661.**

Claim 1, Esmond teaches a blood filter device comprising: a housing that comprises a dome portion (62) forming an upper part of the housing, a filter retaining portion forming a middle part of the housing and a bottom portion (61) forming a lower part of the housing, an inlet (63) provided on a portion of the dome portion, a filter (65), the filter being disposed in the filter retaining portion and an outlet (64) provided in the bottom portion, the device being configured so that blood flows into the dome from the inlet, passes through the filter retaining portion and flows out from the outlet, the filter is formed of a sheet like filter member that has been folded so as to have a plurality of

parallel linear pleats with enveloping surfaces connecting top ends of the respective pleats being flat so that the filter as a whole has a plate shaped outer shape, the filter is arranged so as to partition a cavity of the housing into a dome portion side and a bottom portion side, with the pleats extending across the filter retaining portion (fig. 8-10). Esmond does not teach the inlet being provided on a lateral portion of the dome portion, an air vent or a plurality of holding ribs in the embodiment shown in figures 8-10.

Esmond, in the embodiment shown in figure 1, teaches a housing comprising a dome portion (23) having an inlet (24) provided on a lateral portion of the dome portion so as to allow blood to flow into the dome portion horizontally and along an inner wall of the dome portion, and an air vent (25) provided at a top of the dome portion (fig. 1-3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the dome portion of the embodiment of Esmond shown in figures 1-3 as the dome portion of the embodiment of figures 8-10 because the design ensures the blood flows in a spiral manner so as to effect a uniform distribution and also provides the blood with greater opportunity to release gas bubbles entrapped therein (col. 1, lines 51-60).

Kruse, Wachter and Strnad all teach a housing comprising a filter retaining portion with a filter disposed in the filter retaining portion, and the filter is formed of a sheet like filter member that has been folded so as to have a plurality of parallel linear pleats with enveloping surfaces connecting top ends of the respective pleats being flat so that the filter as a whole has a plate shaped outer shape and a plurality of holding ribs (Kruse, (30, 50); Wachter, (3a, 3b); Strnad, (26)) extending partially and inwardly

from a wall of the filter retaining portion without crossing the filter retaining portion are provided at positions corresponding to end portions of the respective pleats, whereby the holding ribs are inserted in the end portions of the pleats respectively (Kruse, fig. 3-5; Wachter, fig. 1-5; Strnad fig. 1-4).

Using a plurality of holding ribs is very well known in the art as shown by Kruse, Wachter and Strnad and would have been obvious to one of ordinary skill in the art at the time of the invention because the ribs provide a seal at the outer ends of the filter material (Kruse, col. 3, line 60 – col. 4, line 4; Wachter, col. 1, line 50 – col. 2, line 40) and the ribs provide a predetermined width space between adjacent interdigitated rib segments (col. 1, line 60 – col. 2, line 13).

Claim 2, Esmond further teaches a space between an inner side wall of the filter retaining portion and an outer peripheral portion of the filter is filled with a resin so as to be sealed and the filter is fixed to the inner side wall of the filter retaining portion with the resin (fig. 8, 9).

Claims 3-9 recite relative dimensions of the filter apparatus. Esmond does not teach specific dimensions of the apparatus. [W]here the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, *Gardner v. TEC Systems, Inc.*, 220 USPQ 777 (1984).

Esmond teaches the general conditions of the claimed apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the

dimensions of the filter apparatus to achieve the desired filtering capabilities. [W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation, *In re Aller*, 105 USPQ 233 (1955).

Claims 10, 12 and 13, Esmond further teaches the filter consists of a sheet like mesh material having a function of filtering foreign substances (col. 4, lines 52-66); an outer peripheral length of an internal space of the dome portion is reduced toward the top of the dome portion (fig. 1) and an inner surface of the bottom portion has no recess or protrusion (fig. 9).

Claim 11, Esmond teaches the device of claim 1 but does not teach, in the embodiment of figures 8 and 9, the filter retaining portion has a cylindrical cavity. Esmond teaches a device where a filter retaining portion has a cylindrical cavity whose cross section taken in a horizontal direction is circular (fig. 1-3). Having a cylindrical housing is a very well known feature in the prior art and is merely a change in shape that would have been obvious to one of ordinary skill in the art at the time of the invention. The configuration of the apparatus is a matter of choice which a person of ordinary skill in the art would have found obvious absent persuasive evidence that the particular configuration is significant, *In re Dailey*, 149 USPQ 47 (1966). Wachter further teaches such a cylindrical cavity as well known in the art.

2. Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over  
Graus US 6 143 174, Haworth et al. US 5 651 765, Esmond '562, Kruse '122,  
Wachter '288 and Strnad '661.

Claim 1, Graus teaches a blood filter device comprising: a housing that comprises a dome portion (4) forming an upper part of the housing, a filter retaining portion forming a middle part of the housing and a bottom portion (5) forming a lower part of the housing, an inlet (8) provided on a portion of the dome portion, a filter (2), the filter being disposed in the filter retaining portion and an outlet (9) provided in the bottom portion, the device being configured so that blood flows into the dome from the inlet, passes through the filter retaining portion and flows out from the outlet, the filter is formed of a sheet like filter member that has been folded so as to have a plurality of parallel linear pleats with enveloping surfaces connecting top ends of the respective pleats being flat so that the filter as a whole has a plate shaped outer shape, the filter is arranged so as to partition a cavity of the housing into a dome portion side and a bottom portion side, with the pleats extending across the filter retaining portion and a plurality of holding ribs (col. 2, lines 39-52, spacers) extending inwardly from a wall of the filter retaining portion are provided at positions corresponding to end portions of the respective pleats, whereby the holding ribs are inserted in the end portions of the pleats respectively (fig. 1, col. 3, lines 18-32). Graus does not teach the inlet being provided on a lateral portion of the dome portion, an air vent or a plurality of holding ribs.

Haworth and Esmond teach a blood filter device comprising a housing with a dome portion forming an upper part of the housing having an inlet (Haworth, 22; Esmond, 24) provided on a lateral portion of the dome portion so as to allow blood to flow into the dome portion horizontally and along an inner wall of the dome portion and

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an air vent (Haworth, 28; Esmond, 25) at a top of the dome portion (Haworth, fig. 2-5; Esmond, fig. 1-3). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the dome design of Haworth or Esmond with the device of Graus because the design ensures the blood flows in a spiral manner so as to effect a uniform distribution and also provides the blood with greater opportunity to release gas bubbles entrapped therein (Esmond, col. 1, lines 51-60).

Kruse, Wachter and Strnad all teach a housing comprising a filter retaining portion with a filter disposed in the filter retaining portion, and the filter is formed of a sheet like filter member that has been folded so as to have a plurality of parallel linear pleats with enveloping surfaces connecting top ends of the respective pleats being flat so that the filter as a whole has a plate shaped outer shape and a plurality of holding ribs (Kruse, (30, 50); Wachter, (3a, 3b); Strnad, (26)) extending partially and inwardly from a wall of the filter retaining portion without crossing the filter retaining portion are provided at positions corresponding to end portions of the respective pleats, whereby the holding ribs are inserted in the end portions of the pleats respectively (Kruse, fig. 3-5; Wachter, fig. 1-5; Strnad fig. 1-4).

Using a plurality of holding ribs is very well known in the art as shown by Kruse, Wachter and Strnad and would have been obvious to one of ordinary skill in the art at the time of the invention because the ribs provide a seal at the outer ends of the filter material (Kruse, col. 3, line 60 – col. 4, line 4; Wachter, col. 1, line 50 – col. 2, line 40) and the ribs provide a predetermined width space between adjacent interdigitated rib segments (col. 1, line 60 – col. 2, line 13).



Claim 2, Graus further teaches a space between an inner side wall of the filter retaining portion and an outer peripheral portion of the filter is filled with a resin (14) as to be sealed, and the filter is fixed to the inner side wall of the filter retaining portion with the resin (fig. 1).

Claims 3-9 recite relative dimensions of the filter apparatus. Graus does not teach specific dimensions of the apparatus. [W]here the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device, *Gardner v. TEC Systems, Inc.*, 220 USPQ 777 (1984).

Graus teaches the general conditions of the claimed apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention to optimize the dimensions of the filter apparatus to achieve the desired filtering capabilities. [W]here the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation, *In re Aller*, 105 USPQ 233 (1955).

Claims 10, 11 and 13, Graus further teaches the filter consists of a sheet like material having a function of filtering a foreign substance (col. 2, lines 39-52); the filter retaining portion has a cylindrical cavity whose cross section taken in a horizontal direction is circular (col. 1, lines 41-55); and an inner surface of the bottom portion has no recess or protrusion (fig. 1).

Claim 12, Haworth and Esmond further teach an outer peripheral length of an internal space of the dome portion is reduced toward the top of the dome portion (Haworth, fig. 2-5; Esmond, fig. 1-3).

### ***Response to Arguments***

3. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BENJAMIN KURTZ whose telephone number is (571)272-8211. The examiner can normally be reached on Monday through Friday 8:00am to 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on 571-272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Benjamin Kurtz  
Examiner  
Art Unit 1797

/Krishnan S Menon/  
Primary Examiner, Art Unit 1797